

VI. *The way of proceeding in the Small Pox Inoculated in New England. Communicated by Henry New-man, Esq; of the Middle Temple.*

VII. *A Letter from Dr. Nettleton, Physician at Halifax in Yorkshire, to Dr. Whitaker, concerning the Inoculation of the Small Pox.*

VIII. *A Letter from the same Learned and Ingenious Gentleman, giving an Account of his farther Progress in Inoculating the Small Pox: To Dr. Jurin, R. S. Secr.*

I. *The Longitude of Buenos Aires, determin'd from an Observation made there by Pere Feuillée. By Edm. Halley LL. D. Astronomer Royal, and F.R. S.*

I HAVE as Occasion offered, made it my Business to collect such Celestial Observations as might be of Use to determine the Longitudes of Places on the Sea-coast of the World; in order to get as near as possible the Out-line, or true Figure of the Earth, without which our Geography of the Inlands must necessarily be very insufficient. The Memoirs of the Royal Academy of *Paris*, afford a good Number of Observations of this Kind, and among the rest, there is one made at *Buenos Aires* on the River of *Plate*, in the South America, by *Pere Feuillée* in his Voyage to *Peru*: who, in the Memoirs for the Year 1711. is said to have observed at that Place on the 19th of *August*, 1708. the Immersion of the Star in the Southern Foot of *Virgo* (marked by *Bayer* with λ) behind the obscure Limb of the Moon. Being desirous to see what Longitude might be deduced from this

this Observation, I soon found that there was a Fault in the Day, and likewise in the Star; for that λ of *Virgo* was then nearly in 3 Degrees of *Scorpio*, and the Moon would not be there till the next Day, *Monday the 20th of August*; and the Latitude of λ being about half a Degree North, the Moon at that Longitude would be about 3 Degrees more South-erly than the Star, and consequently far from Eclip-sing it; for that at that time the descending Node was in the very Beginning of *Libra*. Hence I con-cluded it must be some other Star, that *Pere Feuillée* ob-served Eclipsed by the Moon: The Day was cer-tainly the 20th and not the 19th of *August*, as was evident by the Place of the Moon; but as to the Star, it was neither in the *Tychonick Catalogue*, nor yet in that more copious *British Catalogue* of Mr. *Flam-steed*; but turning over that of *Hevelius*, I found a Star whose Situation agreed well with the Observation, and was undoubtedly the Star that was seen to im-merge behind the Moon: The Place Mr. *Hevelius* gives it, allowing the Precession of the Equinox, was then $m\ 1^{\circ} 56' \frac{1}{4}$ with South Latitude $2^{\circ} 51' \frac{1}{4}$. It re-mained then for me to be assured of the Place of this Star, and accordingly on the 21st and 24th of *Decem-ber* last, I got such Observations by help of the cir-cumjacent Stars, that I was assured the Place of the Star, (which is a fair Star, of the 5th Magnitude) was at that time, $m\ 1^{\circ} 58' 40''$ with South Latitude $2^{\circ} 54' \frac{1}{4}$, being above 2' in Longitude, and 3' in Latitude, more than *Hevelius* gives it. The Hour of this Oc-cultation is set down precisely $7^h 5' 38''$ at *Buenos Aires*, the Latitude of the Place being $34^{\circ} 35'$ South. Whence the Altitude of the Moon there was then $42^{\circ} 48'$, and the Parallactic Angle $76^{\circ} 38'$, and the Parallax in Longitude $40' 11''$ to the *West* and in

Latitude $9' 33''$ to the North. So the Moon's observed Place corrected by Parallax was in $2^\circ 28' 4''$ with South Latitude $2^\circ 52' \frac{1}{2}''$. To this Place, by the *Calculus* of those Numbers I have fitted to our President's Theory of the Moon (but which would be improper and too long to be here recited) the Moon will be found to have arrived *August* the 2^o at $10^h 57' 36''$ apparent Time at *London*. But at *Buenos Aires* it was then computed but $7^h 5' 38''$, whence the difference of Longitude resulting from this Observation is $3^h 52'$ or 58 Degrees, by how much *Buenos Aires* is more Westerly than *London*. I have twice repeated the Calculation to be sure to avoid error, and by comparing my Chart of the Variation with the Longitude thus found, it appears that in this Case a Ship at Sea using those Tables and that Chart, would by an Observation of this Occultation have fallen with greater exactness on the Coast of *America*, than by any Reckoning can be pretended to be done.
